

He concludes partially as a result of these studies, and chiefly from his own experience, that the sublongitudinal or predorsal fasciculus has its origin in the anterior nucleus of the anterior corpora quadrigemina; that the ventral portion of Meynert's ligament arises from the dorsal median region of the corpora quadrigemina; that the sublongitudinal fasciculus passes obliquely forward and downward toward the median line, enters the capsule of the red nucleus, and some of the fibers then pass down to the root fibers of the oculomotor, but the main portion decussates and unites with the root fibers of the oculomotor of the opposite side. The mechanism of the pupillary reflex then would consist of the following three parts: the peripheral sensory neurone arising from the bipolar cells of the retina and forming the pupillary fibers of the optic nerve which pass to the dendrites of the ganglion cells of the lateral portion of the anterior corpora quadrigemina. Second, the central neurone which consists of the ganglion cells of the lateral portion of the anterior corpora quadrigemina, and the direct or crossed fibers of the predorsal fasciculus which unite with the root fibers of the oculomotor nerve, and with the collaterals of the axiscylinder and sympathetic cells of the ciliary ganglion of the same or the opposite side; third, the peripheral motor neurone, which consists of the cells of the ciliary ganglion and the fibers arising from them which innervate the sphincter of the iris. The pupillary reflex is, therefore, primarily dependent upon the anterior corpora quadrigemina of the opposite side. The direct pupillary reaction is stronger than the indirect on account of the double decussation of the neurones concerned in it. The unilateral reflex paralysis is more pronounced on one side, occurring when the neurones between the anterior corpora quadrigemina and the ciliary ganglion are degenerated. If the ciliary ganglion and the ciliary nerves are destroyed then total paralysis occurs. The consensual reaction is not destroyed by longitudinal section of the chiasm.

J. SAILER (Philadelphia).

DEUTSCHE ZEITSCHRIFT FÜR NERVENHEILKUNDE

(Band 22, Heft 3-4.)

12. Skin Reflexes and Their Nerve Tracts. MUNCH-PETERSEN.
13. Contribution to the Knowledge of Tumors of the Spinal Cord. MEYER.
14. Multiple Sclerosis Developing into a Picture of Transverse Myelitis. FLATAU and KOELICHEN.
15. Acute Cerebral and Cerebrospinal Ataxia. LÜTHJE.
16. Contribution to the Diagnosis of Tumors in the Frontal Lobe. AUERBACH.
17. A Case of Relapsing Bilateral Ptosis, with Myasthenic Manifestations in the Upper Extremities. BYCHOWSKY.
18. Cystic Meningitis in Racemose Cysts of the Central Nervous System. ROSENBLATH.

12. *Skin Reflexes and Nerve Tracts.*—Munch-Petersen contributes a valuable article upon the reflexes of the skin, first discussing the history of some of the more important reflexes, and then defining them as involuntary movements which are produced by irritation of the skin, he then speaks of the atypical form which can be obtained in almost any part of the body, and then mentions the so-called typical forms which include the plantar, cremaster and abdominal reflexes. The degree of irritation required indicates inversely the activity of the reflex. There seems to be some relation between the skin reflexes and the tickling reflexes. He believes the plantar reflex has a single reflex center; discusses most thoroughly the Babinski phenomenon, calls attention to the fact that there is dorsal flexion of the toes during walking in persons who possess it; and discusses some

interesting time estimations that he made upon this reflex by the aid of kinemetographic studies. Investigations have convinced him that the movements of the toes are irregular when the soles of the feet are irritated. He believes that there is a distinct relation between the gait and the plantar reflex, that is to say, they are typical or atypical together. With regard to the arcs by which these reflexes are accomplished, he makes the following statements. When sensation is lost the reflex is lost; when increased the reflex is increased; therefore, sensation is an essential condition for the reflexes. If, however, the reflex is produced by sensation, the sensitive part of the reflex arc must have its center in the cortex of the cerebrum. The relation of the plantar reflex to the gait indicates that it has some relation to a motor center in the Rolandic cortex. Analogy indicates that the skin reflexes have their sensitive as well as their motor centers in the cortex of the cerebrum. A study of these reflexes in different conditions seems to lead to the same result. In diseases of the peripheral nerves or in total lesion of the spinal cord the skin and tendon reflexes were entirely lost. Voluntary motion and sensation were also lost, and, therefore, there was reason to believe that the tracts of these different functions were identical as far as the point of solution of continuity. Munch-Petersen has found that when the plantar reflexes were in part preserved the motor tracts were not entirely destroyed. Studies of apoplexy also lead to the conclusion that at least as far as the internal capsule, the reflex tracts and the tracts for voluntary motion were identical. In cases of recent apoplexy with a persistent plantar reflex the prognosis is more favorable. Further, in those cases in which there is ataxia in motion, dorsal flexion during walking is found in those cases in which the Babinski phenomenon is present. Babinski's phenomenon he believes is due to a degeneration of the pyramidal tracts which gives rise to a paralysis of the plantar flexures or to ataxia. In hysteria the skin reflexes are influenced, but show no qualitative alterations from the normal. During hypnosis suggested anesthesia diminishes or abolishes the skin reflexes; suggested hyperalgesia increases them. In conclusion Munch-Petersen calls attention to the following experiment. If the sole of the foot is irritated with a needle the foot is drawn upward; if a threat is made to irritate the sole of the foot with a needle, the foot is also drawn up, finally in some cases the mere sight of the needle is sufficient to produce an involuntary movement of the foot. Therefore, we cannot state certainly that the skin reflexes are not produced by an act of the will, but only that this activity of the will does not reach the highest phase of consciousness. The skin reflexes are in all probability located in the cortex of the brain.

13. *Spinal Cord Tumor*.—A girl fourteen years old had severe pain and paresthesia of the left upper extremity accompanied by some weakness. Fifteen months later she developed spastic paralysis of the left leg; three months later there was flaccid paresis of the right arm and spastic paresis of the right leg. About the same time she had pain in the middle of the cervical region of the spinal column and tenderness upon pressure over the fourth and fifth vertebrae. In the course of the next six months she developed almost complete spastic paralysis of the legs. There was some atrophy of the arms on both sides and hypalgesia and hypesthesia on the ulnar sides. There was some disturbance of the bladder and rectum. The order in which the symptoms appeared was rather against tumor of the spinal column, and they were rather difficult to make agree with tumor of the cord itself, therefore there was reason to believe that the meninges were involved. It was not possible to decide whether it was extra- or intradural although the early development of the bone symptoms speaks in favor

of the former. These symptoms Meyer believes in agreement with Bruner, are not trustworthy. The segments or roots involved were apparently the fifth, sixth and seventh, and probably on account of the hypesthesia and hypalgnesia on the ulnar sides of the arms, the eighth cervical and first dorsal segments. The clinical symptoms were remarkable, partly for the variation from time to time in the areas of disturbed sensation, and the frequent involuntary flexion of the legs. At the autopsy the stomach was found to be enormously dilated. This was possibly the result of the lesion of the spinal cord. A tumor was also found on both sides of the dura, constricted at the point at which it passed through this membrane. It was about three by one cm. in size, shaped something like an egg; its surface was smooth, it was firm in consistency, and directly involved the sixth, seventh and eighth cervical and dorsal segments. It also involved the left side of the cord and pressed from the anterior surface backward. Histologically it proved to be a fibro-sarcoma. Operation was not performed partly because hypertrophic cervical pachymeningitis was suspected, and partly because the condition of the patient was so bad.

14. *Multiple Sclerosis and Transverse Myelitis*.—Flatau and Koelichen report the case of a woman sixty years of age who had been exposed to cold. After this she developed fever, had pain in the legs, no control of the bladder, and obstinate constipation. She became bedridden, was unable to walk or turn over in bed; there was almost complete paralysis of the right leg, although she was able to flex the thigh, and still had slight power of adduction; there was almost complete paralysis of the left leg, the movements being even less than on the other side. There was slight spasticity of the flexors of the right thigh. Although the legs were emaciated there were no muscular atrophies. There were some slight sensory disturbances, loss of the patellar reflex on the left side and great diminution on the right. Severe irritation of the sole of the foot caused withdrawal of the leg. There was a bedsore over the sacrum and over both trochanters. The patient gradually grew worse and died. At the autopsy nothing was found macroscopically in the brain and spinal cord. A very careful description with illustrations is given of the results of the Kneisel, Weigert and Marchi methods. The changes found could be classified in two groups: first, early degeneration with degeneration of the myelin fibers not involving the blood vessels or neuroglia; and second, advanced areas of degeneration with involvement of the blood vessels and the neuroglia, and the presence of a great number of compound granular cells. The authors regard the case as an atypical form of multiple sclerosis. There were very slight changes in the nerve cells and in the axis cylinders, which they consider characteristic of this disease, and they classify multiple sclerosis therefore as a diffuse process involving inflammation of the blood vessels of the nervous system, especially the spinal column. In an editorial note Strümpell states that he believes the case to be one of acute disseminated myelitis, and not multiple sclerosis.

15. *Cerebral and Cerebrospinal Ataxia*.—Lüthje reports the following three cases of acute ataxia. A boy of ten years was suddenly attacked by headache, prostration and vomiting. There were no mental symptoms for the first two days, when the patient became violently delirious, there were signs of bronchitis in both lungs with a roseola eruption. The fever lasted for about five weeks, gradually falling to normal. The patient throughout the greater portion of the time was unconscious, then became confused, had to be fed, had peculiar twitchings in the muscles of the face. The Widal reaction was positive. A month after the temperature had become normal the patient began to show signs of returning intelligence, and a

month later it was impossible to make a careful examination. At this time, aside from a rather exaggerated emotional state, his intelligence was normal. Speech was deep, somewhat nasal and monotonous, pauses frequently occurred between words and syllables, and the different syllables were sometimes enunciated in an explosive manner. The motor power was not altered. At any attempt at voluntary motion, however, there was extreme ataxia and sometimes associated movements of the other arm when one of the upper extremities was moved. Walking was entirely impossible; sensation was normal; the reflexes were increased; and there was ankle-clonus. The patient gradually improved, was able to sit up alone, the ataxia disappeared to a large extent, although it was more pronounced in the left than in the right arm, and was still evident in the legs. There was bilateral disturbance of the stereognostic sense. Two months after convalescence from the fever, speech was still gravely disturbed. The second case, a sister of the first, nine years old, was brought to the hospital suffering from a severe attack of typhoid fever. She was unconscious for weeks, and five weeks after onset of the disease began to have twitchings in the face and rhythmical lateral movements of the head. During convalescence examination showed that speech was toneless, the syllables were pronounced slowly, occasionally explosively; there was marked ataxia in the movements of the arms and legs, especially the latter; the patellar reflexes were exaggerated, and there was distinct ankle-clonus. When the patient attempted to stand there were violent oscillations which were not increased by closing the eyes. Sensation was not disturbed. She gradually improved, but when discharged had difficulty in walking, and the speech was still monotonous and scanning. The third case, a six-year-old brother of the two preceding cases, was brought to the hospital suffering from typhoid fever, which also proved to be a severe attack. During the attack he had dilatation of the right pupil, was unconscious, later confused, and also developed rhythmical lateral movements of the head. When excited he had disseminated erythematous eruption over the head and face, exquisite ataxia in the head and trunk, and no control of the sphincters. There was no disturbance of sensation, but the stereognostic sense was not tested. Speech was slow and monotonous and the syllables were separated. The tendon and skin reflexes were exaggerated. This patient rapidly improved and was discharged almost well. The cases are very similar, and Lüthje believes they belong to the pure cerebral form of acute ataxia. In one case, however, the symptoms indicated involvement of the cerebellum. He discusses the differential diagnosis of spinal, bulbar and cortical ataxia and is inclined not to exclude the latter because hemiparesis and hemiplegia did not exist; because the clinical course showed that whatever the lesions were they were exceedingly slight. He believes that the disturbance of the stereognostic sense is one of the most important signs of the cerebral origin of the disease. The disturbance of speech did not indicate bulbar, but rather cortical involvement. He concludes with a careful study of the literature, having found and abstracted sixteen cases, in many respects similar to his own. Some of these were purely cerebral, and a few evidently cerebrospinal in origin. In an annotation he states that four months after the patients were discharged the two younger were almost entirely well; speech was slightly slow, and the patellar reflexes were exaggerated. In the first case the speech was still scanning and monotonous and the reflexes were exaggerated and there was still slight ataxia in the extremities.

16. *Frontal Lobe Tumors.*—Auerbach reports the case of a woman forty-eight years of age who had always suffered from migraine. Usually

she had been industrious, but she began to neglect her work, became irritable, complained of fatigue, had increasing headache, and often refused to leave her bed. From time to time she vomited. The condition gradually grew worse, she ceased to take interest in things, often refusing to eat unless urged. She was apathetic, unclean, and slept considerably. There was some swelling of the face. The nervous system, with the exception of increased patellar reflexes without ankle-clonus or Babinski's phenomenon, and slight tremor of the hands on motion, was negative. Intelligence seemed to be considerably diminished. Memory for recent events was impaired; there was no tendency to joke. There was a suspicion of myxedema; the patient was given thyroid tablets without benefit. She had an apoplectiform attack during which she was unconscious for half an hour, but subsequently recovered, when it was noted that she had difficulty in fixing the eyes, the pupils were dilated, swallowing was difficult and the patient was bent forward and complained of pain in the spinal column. Examination of the eyes showed choked disks. Later she developed stiffness of the neck, and pain upon movement of the head, gradually grew worse, became comatose and died. At the autopsy the frontal lobes were found flattened, the dura was adherent in this region, and the veins were more congested here, especially over the left frontal lobes. The base of both frontal lobes was occupied by a tumor about the size of an apple, extending from the anterior perforated substance forward. The surface of the tumor was somewhat nodular; the mass had about the consistency of liver tissue, and the color varied from pink to dark red. Microscopically it proved to be a fibrosarcoma, probably arising from the dura of the base. The diagnosis presented many difficulties. At first Professor Edinger, who also saw the case, thought of precocious senile dementia, or arteriosclerosis in the vessels of the brain. Later tumor of the frontal lobes was suspected, but the only symptoms were the headache and the psychological disturbances. Of the latter, disturbance of memory and loss of the power of attention, the loss of any initiation or apparently voluntary action, were the most prominent features. Auerbach discusses the theory that intelligence is located in the frontal lobes. He believes that in the human brain they are to be regarded as the most important center of association. Among the interesting symptoms are the apoplectiform attack, the occurrence of choked disks, the absence of disturbance of equilibrium, and the absence of a tendency to make jokes. There is apparently no other case in which the tremor of the hands was so marked. Among the negative symptoms it may be mentioned that the temperature was not elevated at any time, and smell apparently was not disturbed. Toward the last, in addition to the tendency to fall forward, and the pain in the neck, slight paresis of the left facial nerve had developed. Operation was not performed, chiefly on account of the objection of the relatives.

17. *Relapsing Bilateral Ptosis*.—Bychowsky reports the following interesting case. A girl of fifteen years gradually developed ptosis. In the morning she noticed that the eyelids felt heavy, and toward evening she was unable to lift them. The condition lasted three days when electricity was employed and she recovered. At the age of nineteen the ptosis again suddenly recurred. It was complete and was not accompanied by contractions, so that it was easily possible to raise the lids. The eye muscles appeared to be normal; the pupils reacted promptly; the patient's nutrition was good; there were no paralyses of the muscles of articulation, although the speech seemed to be slightly nasal. The patient was given galvanic current and felt better, although the ptosis persisted. Finally, however, during the night it suddenly disappeared. At the age of twenty-one a third attack occurred. On this occasion the patient had severe headache, but the

symptoms otherwise seemed to be the same as in the last attack. The electrical reactions of the muscles of the eye were normal. It was noted, however, that the muscles of the arms became very rapidly fatigued upon exertion, so that after lifting them five or six times they were practically paralyzed. During the application of the electricity to the muscles of the face the ptosis suddenly disappeared and there was not myasthenia of the muscles of the eye; it persisted, however, in the muscles of the arms. In the course of four days, however, this had also vanished. Bychowsky gives a careful discussion of the literature of myasthenia and recurrent paralysis, and reaches the conclusion that his case belongs to the group of myasthenic paralyses. It also bears a certain relation to the Vertige paralyssant of Gerlier, and the kubisagari of Miura, probably identical conditions. In a postscript he mentions the fact that at the age of twenty-two the patient had a fourth attack during which Bychowsky was able to determine the presence of the myasthenic reaction in the ocularis and biceps, and the extensors of the fingers on both sides. This reaction persisted for a time and then the patient improved.

18. *Cystic Meningitis*.—Rosenblath reports the following case. A man of forty-seven years was suddenly attacked by trembling of the limbs so that he was obliged to sit down. This continued for two weeks and rendered him incapable of even dressing himself. Later he began to have headache on the left side, was depressed and stopped work. A careful examination failed to show any changes in the motility, sensation, or the reflexes. Finally the patient complained of inward tremor; there was no obvious oscillations of the limbs. Later he developed extremely severe headache and pain and stiffness in the neck. Then there were attacks of vertigo causing him to fall down. It was then observed that he had choked disk. The forehead was tender to percussion, but motility, sensation and the reflexes were normal. There was neither ataxia nor tremor. The attacks of vertigo were sudden, causing him to fall heavily although he rarely lost consciousness. His intelligence gradually altered, his memory was impaired, and occasionally he seemed confused. Sometimes he had hallucinations of vision. His mind gradually failed; he developed agraphia and alexia, became more and more apathetic, and toward the end had vomiting. There were some anesthesia in the right half of the body; his temperature rose, he had a tendency to sleep, and finally died of dyspnea, and paralysis of the muscles of deglutition. At the autopsy some calcareous infiltrated cysts and some clear cysts were found in the neighborhood of the chiasm at the foot of the third frontal convolution on the right side; at the top of the temporal lobe and over the pons and medulla. A large cyst was found also in the posterior portion of the left lateral ventricle. A few cysts were also found in the upper portion of the cervical enlargement. Around these cysts there was occasionally cellular infiltration, particularly in the neighborhood of the blood vessels. A diagnosis of cysticercus racemosus of the brain was made. It is probable that the symptoms were produced rather by the involvement of the meninges and the blood vessels in the neighborhood of the cysts than by the cysts themselves. Rosenblath believes that cysticercus racemosus of the brain is not so very rare; death usually occurs slowly, the symptoms lasting one or two years, although they may last longer; and Zincker has believed that in two of his cases the symptoms persisted for seventeen or eighteen years. The earliest symptoms are those of neurasthenia; later there is weakness of the limbs, pain and stiffness of the neck, then attacks of weakness associated with tremor of the extremities; headache and vertigo are quite common. Cramps have been described in about half of the recorded cases; they may be slight twitchings of the arms

and legs, or they may resemble epilepsy. Not infrequently paresis may occur. The eyes may become prominent, there may be diplopia or ptosis. In many cases there is sudden transient blindness, and in a few hallucinations of vision. Aphasia is rare. Cerebral vomiting is very common. As a general rule patients become demented, but occasionally they are maniacal. It is possible that many of these symptoms are due to vital phenomena on the part of the cysticercus, although it seems to be certain that the majority are dependent upon changes in the blood vessels. It is most difficult to distinguish this condition from cerebral syphilis.

J. SAILER (Philadelphia)

JOURNAL DE NEUROLOGIE.

(1903, VIII, No. 1, January 5.)

1. Methods of Improving the Organization of the Belgian Asylums. J. CROcq.

1. A discussion of the method of caring for the insane in Belgium and in other countries, with suggestions as to their improvement, which is not suitable for review here.

(1903, VIII, No. 2, January 20.)

1. Facio-scapulo-humeral Hemiatrophy. A. DEBRAY.
2. Case of Hystero Syphilis. THOORIS.
3. Note on the Babinski Reflex. C. HELDENBERGH.

1. *Facio-scapulo-humeral Hemiatrophy*.—A report of a case of this character beginning subsequent to fracture of the wrist. The author thinks that the long continued sensory irritation due to the wrist injury may have sufficed to determine a functional disturbance in the trophic nerve cells situated in neighboring medullary segments, hence the atrophy. There was paradoxical electric reaction in the atrophied muscles, faradic irritability and, to a less extent, galvanic irritability being increased. There was some improvement under the continued use of faradism with rubbing and suitable diet.

2. *A Case of Hystero Syphilis*.—Report of a case of hemiplegia and hemianesthesia, in a man of twenty-seven years of age, formerly syphilitic, in which the combination of symptoms, and the lack of effect from syphilitic treatment, caused the author to conclude that the trouble was of hysterical, and not of organic origin.

3. *Note on the Babinski Reflex*.—A short discussion of the method of production of this reflex which the author thinks the type of abnormal cutaneous reflexes, an extrapyramidal, or "spino-mesencephalic" reflex, as he calls it.

(1903, VIII, No. 3, February 5.)

1. Multiple Sclerosis. BOUCHARD.
2. Bilateral Atrophic Paralysis of the Tongue. DECROIX.

1. *Multiple Sclerosis, Movements During Repose*.—Description of a case observed during six years (from the age of sixteen to that of twenty-two years), which presented the following sequence of events. At first headache, vertigo, drooping of the upper lids and deviation of the right eye outwards, next loss of power, and exaggerated reflexes in the lower limbs, with continuous involuntary movements in them, these later being replaced by similar movements in the upper extremities. Speech then became difficult, of a scanning character, and finally unintelligible, while the legs grew so stiff as to make walking impossible. These symptoms, which took a year for their development, remained stationary for a long